168.-16.

Eberling

-Tile- Brick & Block Machines

Concrete blocks

THE EBERLING MACHINES SALES CO.
2394 Canal Road Cleveland
Peoples Gas Bldg. Chicago

EBERLING ECONOMY EQUIPMENT

THE EBERLING MACHINES SALES CO.
CLEVELAND, OHIO

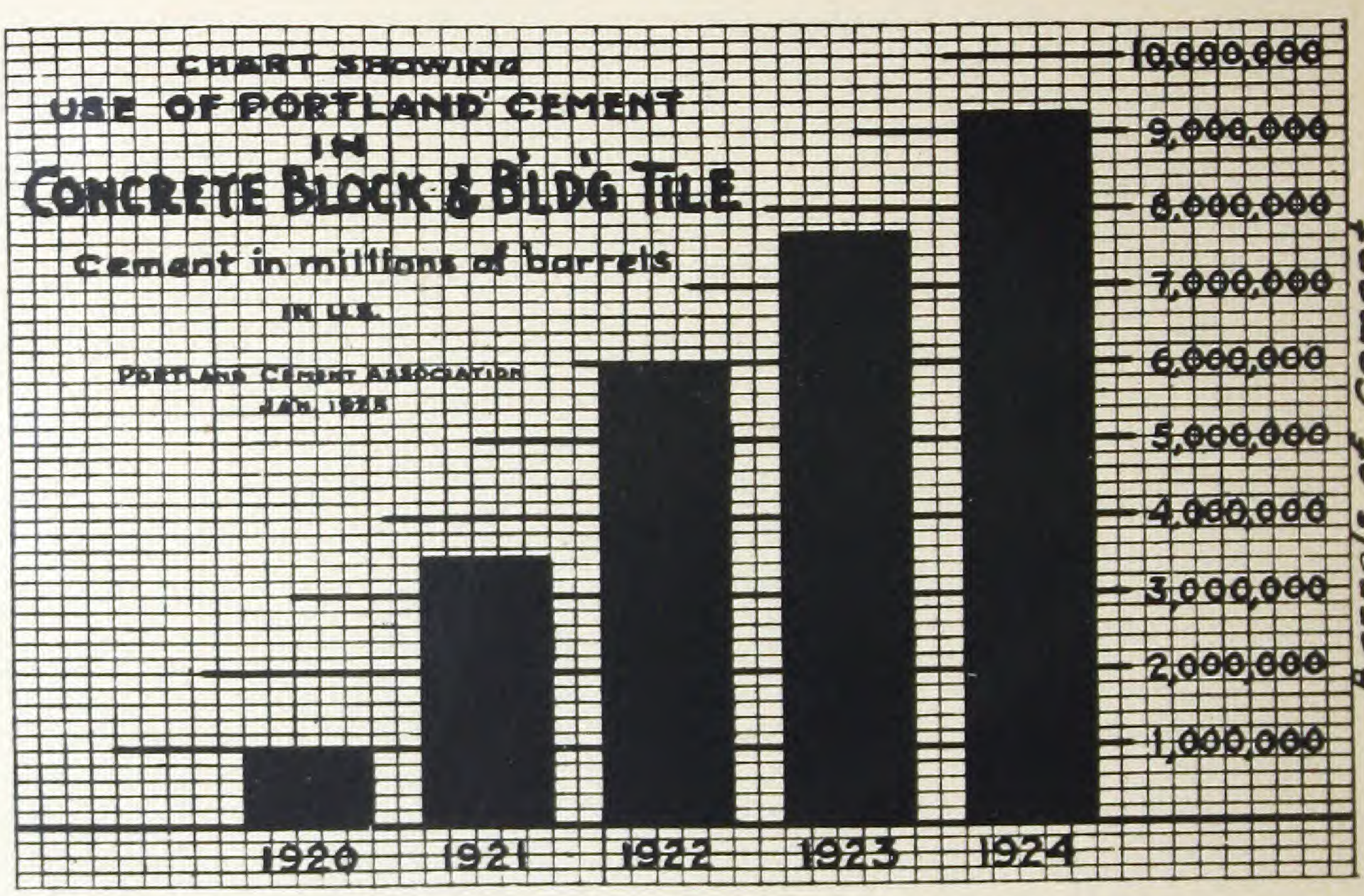


CHART SHOWING
USE OF PORTLAND CEMENT
IN
CONCRETE BLOCK & BLDG TILE
Cement in millions of barrels
IN U.S.
PORTLAND CEMENT ASSOCIATION
JAN. 1925
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
Barrels of Cement
1920
1921
1922
1923
1924

THE CONCRETE PRODUCTS INDUSTRY

The Portland Cement Association [redacted] chart on opposite page shows an increased use of portland cement from 1,000,000 barrels in 1920 to 9,000,000 barrels in 1924, all used in the manufacture of concrete block and building tile. This is an increase of 900% in five years. The records for 1925 will probably show that 11,000,000 barrels of portland cement were used in making block and tile. The value of all concrete products made in 1924 exceeded $300,000,000.00. This industry has passed the age of infancy, and is growing rapidly.

This ever expanding industry offers opportunities for profit to men of ability who are prepared to use good business methods in establishing and operating concrete products plants.

The art of making concrete products has been simplified by scientific research. There is no mystery in making concrete products of quality. Knowledge of equipment and methods are of course necessary. Knowledge may be gained by reading periodicals and books dealing with the industry. Men of experience as managers, superintendents, skilled workmen, and salesmen are available.

Equipment of all kinds and types is available to those who wish to buy. There are on the market machines of comparatively small production which may be purchased at prices that seem comparatively low, and are low, if rapid production is not of importance.

AUTOMATIC MACHINERY

This booklet will treat of equipment of such excellence that the oft used word "best" may well be used to describe it. The word automatic has also been used in a loose manner when applied to machinery, but that machine is truly automatic which will take concrete from a hopper, transform it into block, tile, or brick, and deliver the products automatically onto pallets, and the loaded pallets onto a moving carrier that transfers the green products slowly, smoothly and without vibration to the curing rooms, and from the curing rooms to the exit of the rooms. If such a machine will work continuously from dawn to dark, or for the entire day without stopping, then it can be truly termed "automatic."

EBERLING ECONOMY EQUIPMENT

EBERLING machines are automatic in the true sense of the word. All that is necessary is to start the machines, keep them supplied with concrete and pallets, and steady continuous production of building tile, block, and brick will result.

Many an operator of a concrete products plant has said "When will a real automatic, rapid production machine be put on the market?" The answer has been, "When the members of the industry are ready to consider the total cost of a plant equipped for large production and not to regard the price of a single machine as the measure of value."

PRODUCTION VERSUS COMPETITION

Rapid production is necessary in this day of keen competition. Manufacturing costs must be reduced to a minimum. Profits must be made by the operators of concrete products plants.

The greatest products will be realized only when the entire plant is equipped for maximum production at a minimum cost. It avails nothing to install a machine of high productive capacity if concrete is not fed to it steadily and as required. It avails nothing if the finished products are not removed as quickly as they can be made.

Too many block, brick, and tile machines are not working to their full rated capacity for one reason or another.

Charles M. Eberling has been working since 1909 to solve all of the problems relating to the manufacture and use of concrete building units. He is a pioneer who has seen his ideas developed on a commercial basis.

With equipment designed by Mr. Eberling, it is now possible to so equip a products plant as to save labor, expedite production, lower costs, increase quality, and make larger profits than have been possible heretofore. The profits in the past have been more or less satisfactory to the owners of plants. It is now possible for every plant owner to modernize his plant, and for new entrants in the industry to start on a good profitable basis. It is no longer necessary to turn away orders due to slow production. Competition can be met, and orders can be accepted and filled by an Eberling plant.

Plants designed by Eberling require less space for machine room, and thereby leave more space for storage on a given plot of ground, as small as one acre.

Eberling Equipment includes continuous mixers that mix; block, tile, and brick machines that work, and a transfer system that is the most economical of any system of transfering concrete products from the machine to the curing toom. The handling of cured products from curing room to storage yard has been simplified.

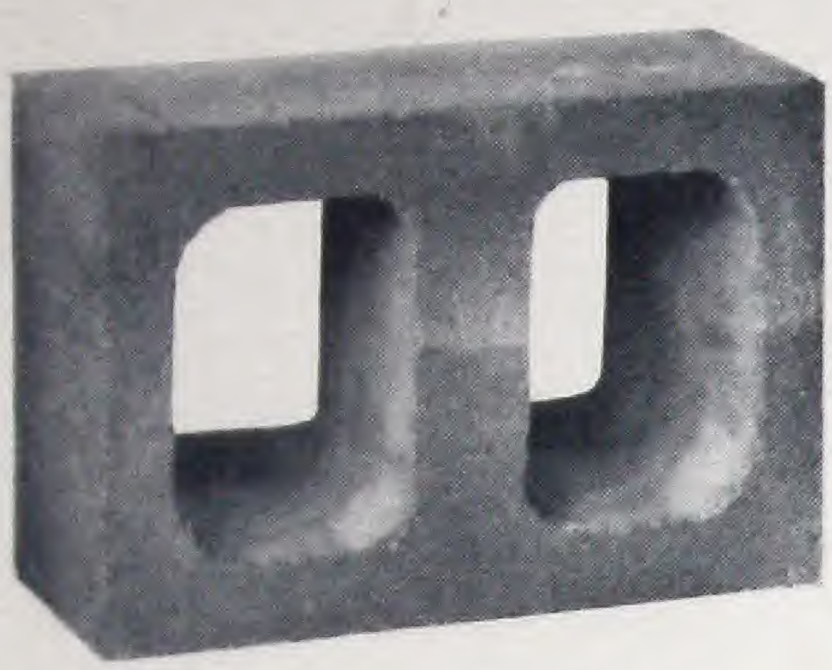
Every person now in the industry owes it to himself to install Eberling Equipment if the market to be served will absorb the output of 2,000 block, 5,000 5 x 8 x 12 tile, or 30,000 brick a day.

Every one about to engage in the manufacture of concrete products owes it to himself to select the most economical equipment when considered from the point of production costs. It is expensive to install low production equipment and then change to high production equipment. The market should be studied, and an estimate made as to the requirements for durable, fire-resistant building materials.

There is a field for low production equipment and that is in the markets where but few buildings are to be erected each year. Good salesmen can sell concrete block and tile to the city dweller and to the farmer.

EBERLING BUILDING TILE

Building tile is increasing in favor as its merits become better known.



5″ x 8″ x 12″ Detroit Tile

The Detroit E-Z Grip Concrete Tile was designed to meet the requirements of architects in Detroit who desired the best possible unit for the construction of public schools. The Detroit tile was evolved, and was selected for the construction of the Pitt Stadium, Pittsburgh, in 1925 This is the largest structure of its kind in the world. The endorsement of constructors in Detroit and Pittsburgh of this tile is indeed strong commendation for a building unit.

The Detroit tile meets the demand of today and tomorrow for a tile of strength, ease in handling, and ease in laying. A 5 x 8 x 12-inch Detroit tile weighs from 20 to 21 pounds, the variation in weight occurring with aggregate of varying specific gravities and the amount of moisture in the tile when weighed. This tile can be easily gripped with one hand by grasping the center web. The top surface is greater than the bottom surface, and this provides a mortar bed of ample area. This feature aids in more rapid laying as there is less likelihood of mortar dropping in the air space. A 5 x 8 x 12-inch Detroit tile is equal to six brick when laid in a wall.

Detroit tile 5 x 4 x 12-inch weigh from 12 to 13 pounds each. Weights are based on ordinary concrete weighing 150 pounds per cubic foot. When light-weight aggregate is used such as cinders, coke breeze, Haydite, or Novocrete, tile of less weight are produced. A 5 x 4 x 12-inch Detroit tile is equal to three brick when laid in a wall.

Detroit tile will, if fully bedded in mortar, have a wall of much greater strength than is ordinarily obtained where mortar is spread only on the outer edges of the tile.

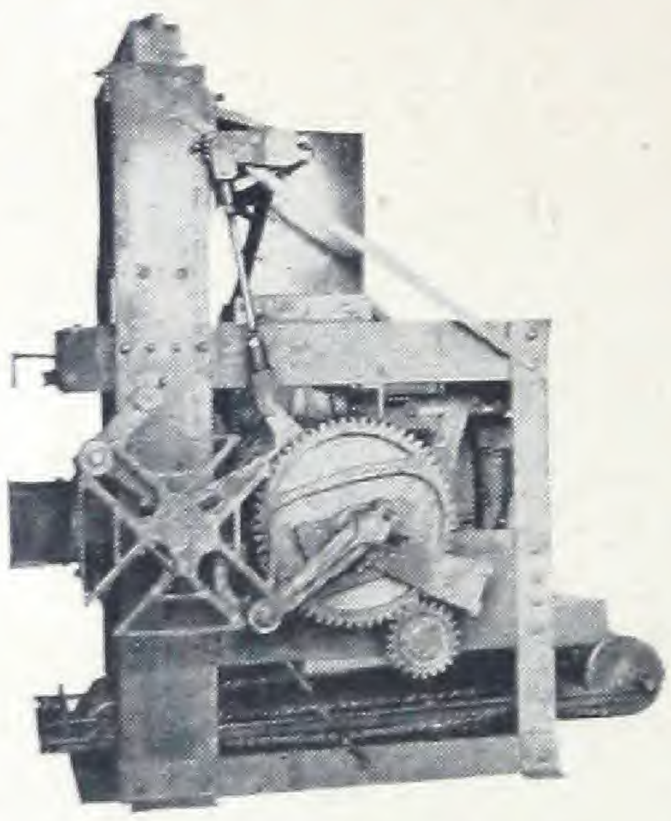
The guaranteed capacity of the Eberling Tile Machine is 5,000—5 x 8 x 12-inch, or 10,000—5 x 4 x 12-inch tile per day. The same wood pallets are used for both sizes of tile. This reduces plant investment. Pallets are self-racking in that they are so made that they may be racked one on top of another without the aid of loose sticks, separators, platforms, or racks of any kind. The term "self-racking" is used because the pallets contain in the one unit all that is necessary for quick piling of loaded pallets.

LONG-LIFE PALLETS

As pallets do not pass through the machine while the tile are being made, they are not subjected to pounding or hammering. Wood pallets well soaked in pine tar creosote oil have a long life in an Eberling-equipped plant.

CONCRETE BLOCK

Concrete block made on Eberling machines have true corners and edges. The top surface is level and just rough enough to provide a good mortar bed. Dimensions are uniform. The block being stripped from the mold box gives a unit that is ideal for walls that are to be left in the rough or stuccoed. Uniform dimensions are of importance to the contractor. Eberling block satisfy the contractor.



Eberling Block Machine, Base 6½ x 8 ft. Height 8 ft.

Concrete block of standard dimensions are made on Eberling Block Machines. The same self-racking pallet is used for all widths of block, and this reduces the number of pallets required and results in a saving on plant investment.

Concrete is fed into the mold box in three charges and each charge is thoroughly tamped by powerful tampers, each tamp being equal to 800 pounds dropping 20 inches.

An 8 x 8 x 16-inch block displaces 12 standard brick in a wall; the 8 x 10 x 16 inch block displaces 15 brick, and the 8 x 12 x 16-inch block displaces 18 brick.

CONCRETE BRICK

Eberling Brick are made with a deep depression or frog in the bottom surface. This enables the brick to be laid when saturated with water. There is no delay after a rain or shower waiting for brick to dry. Immediately the rain stops bricklaying can start again. The frog reduces the weight of brick and prevents floating or slipping.

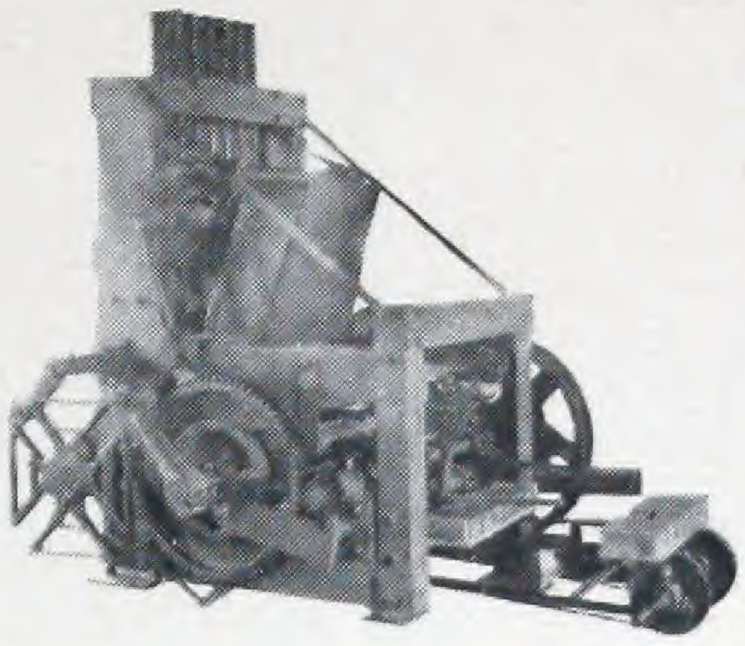
Concrete is fed into the brick molds in one charge. Tamping is accomplished by dropping divided tampers weighing 600 pounds a distance of from 12 to 20 inches. The fall can be adjusted for any distance between 12 and 20 inches.

Eberling Brick are uniform in line, corners, and in every dimension.

EBERLING BRICK STAY WHERE LAID

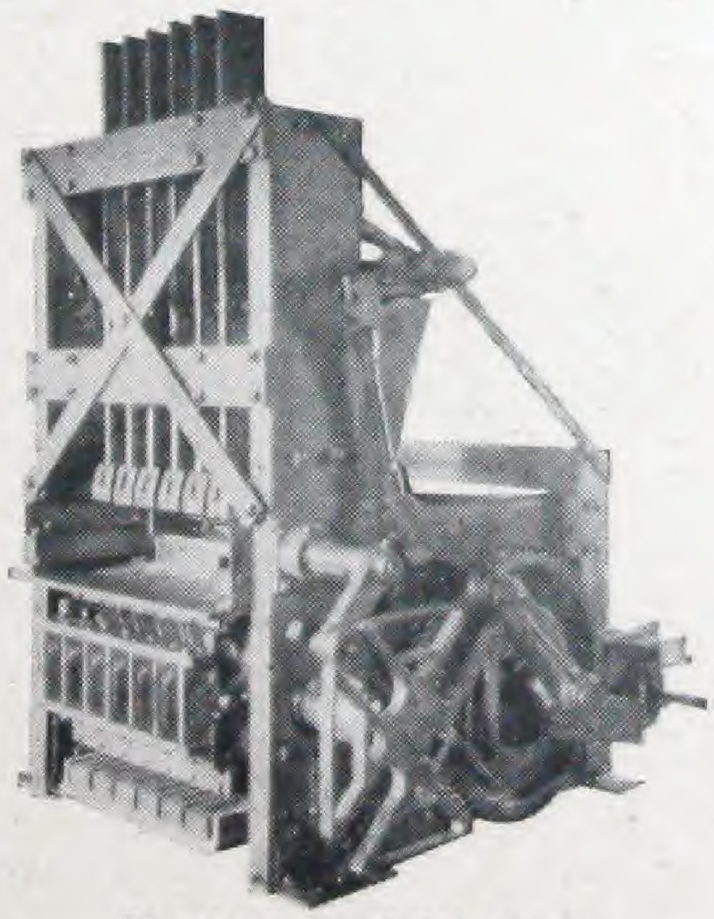
Brick of *uniform thickness* are produced at every operation. It is logical that such brick will meet with favor among masonry contractors. With dense faces the brick has sufficient suction in the body to permit them to be laid in wet mortar. Breakage in handling Eberling brick need not be considered. A production of 30,000 brick a day is guaranteed.

Concrete brick production is increasing and now that there is a machine on the market that will produce 30,000 brick a day it is to be expected that more concrete brick will be laid in the future. This is to be expected because with an Eberling Brick Machine manufacturing costs are reduced and satisfactory brick are produced. Standard size brick should be made but as long as different markets demand brick that vary from the standard then just so long should brick be made that will meet the requirements of the local market. Eberling Machines are supplied to make brick of any size desired.

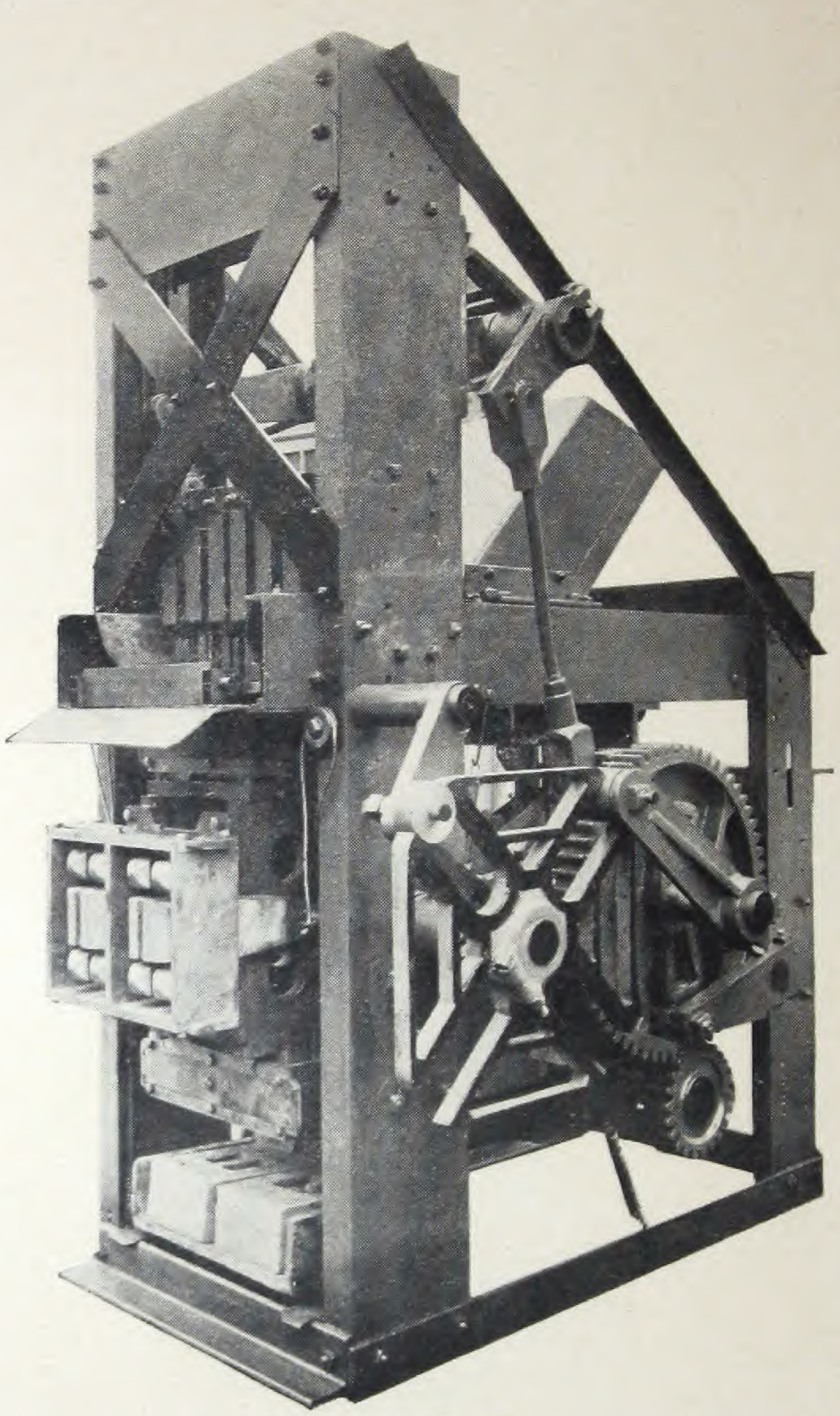


Eberling Brick Machine, Rear View

Concrete Brick



Eberling Brick Machine,
Front View, Base 7 x 8 ft. Height 8 ft.



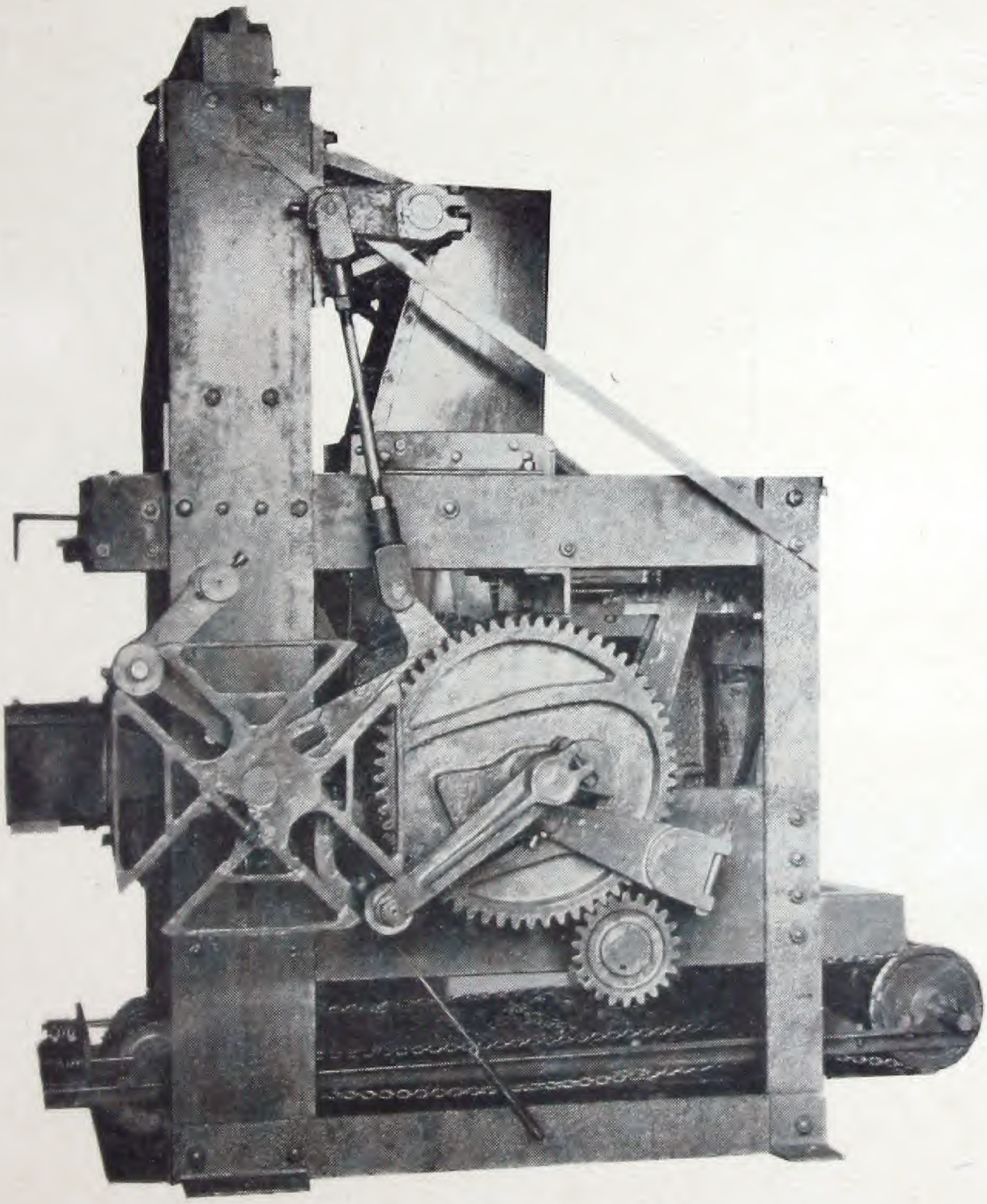
Eberling Tile Machine

TILE, BLOCK AND BRICK MACHINES

All tile, block, and brick machines are fully automatic, requiring but one man to operate them. They are built of materials that by experiment have proven amply adequate. All parts are of ample size. Where weight, thickness, and strength are required, parts of proper dimensions are used. There has been no attempt to skimp or to save money or weight by lightening parts. Sturdy

dependability is built into every machine. C. M. Eberling knows from experience as operator of a large concrete tile plant that it is less expensive to own and operate machinery amply strong than to own light equipment and spend heavily for repairs.

Eberling Machines operate smoothly, without jar or vibration In an Eberling plant conversation can be carried on in an ordinary voice between persons standing next to the machine. There are no fast moving parts. Movements are slow, sure, and effective. Rapid production is gained by successive mechanical movements that are perfectly synchronized. A continuous mixer feeds thoroughly mixed concrete to the hopper and feeding of concrete to



Eberling Block Machine - Built for Service

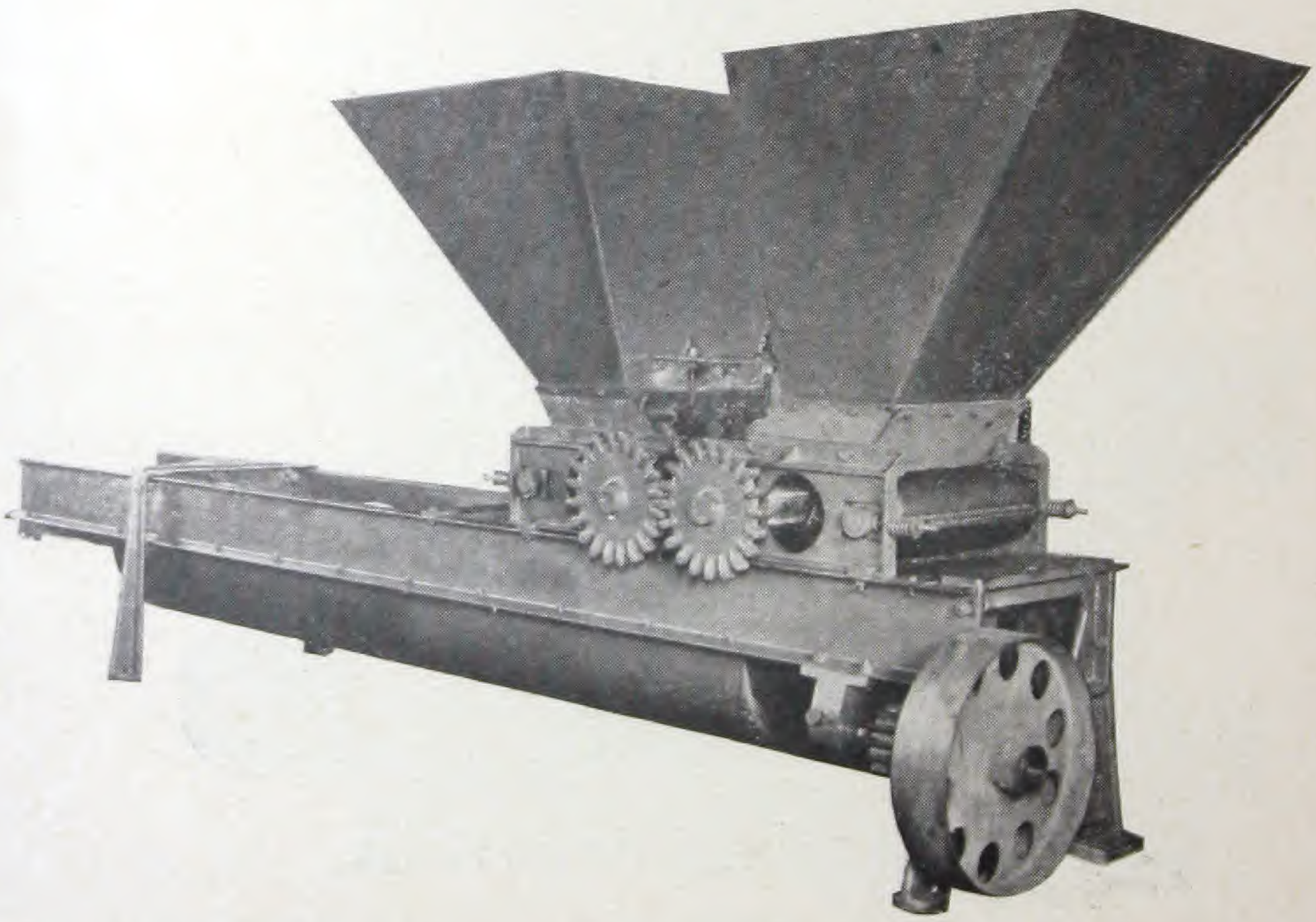
each mold box is automatic, tamping is automatic, and delivery of the products on wood pallets is automatic. Pallets are placed by the machine operator.

Block and tile are tamped by tamper bars equal to a weight of 800 pounds dropping 20 inches. After each blow the tampers rise so as to maintain the distance of 20 inches. The fall of the tampers may be adjusted from 14 to 24 inches, thereby controlling the density of the block or tile. The decreased fall is advisable in making cinder concrete and coke breeze tile and block.

Block machines are supplied with dies for 33-1/3% or 40% air space block, and for block 8 x 8 x 16, 8 x 10 x 16, and 8 x 12 x 16-inches in size.

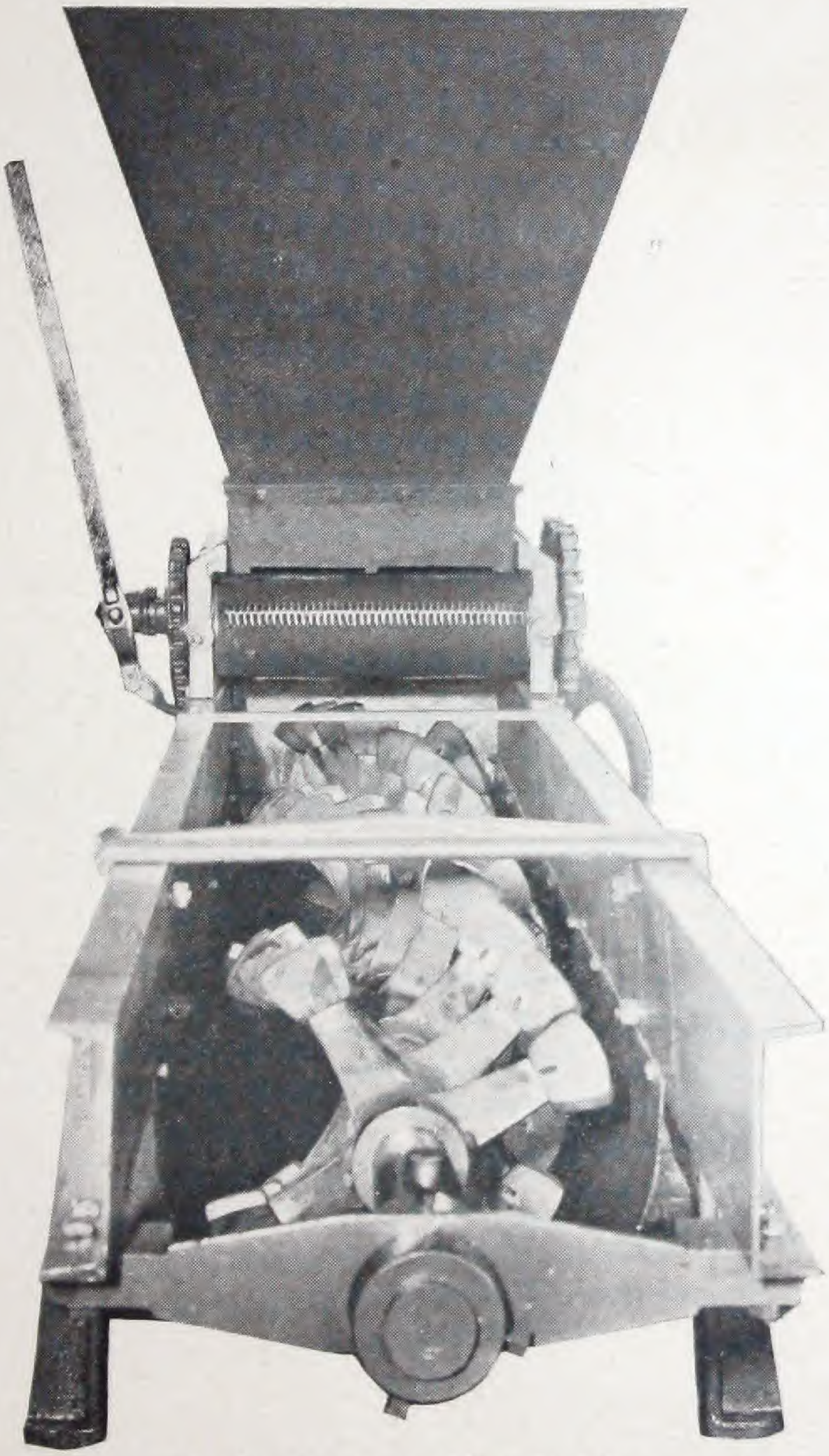
CONCRETE CONTINUOUS MIXERS

Eberling Continuous Mixers *mix*. Concrete is so thoroughly mixed by Eberling Mixers that engineers are rapidly changing their opinions of continuous mixers from an adverse attitude, and are now taking a favorable attitude. Eberling Mixers are equipped with removable tips on the paddles. When the tips wear down they are easily removed by taking out the holding nail or bolt and putting a new tip in place. This results in maintaining the full efficiency of the mixer.



Eberling Continuous Mixer, Double Hopper or "A" Type, Side View

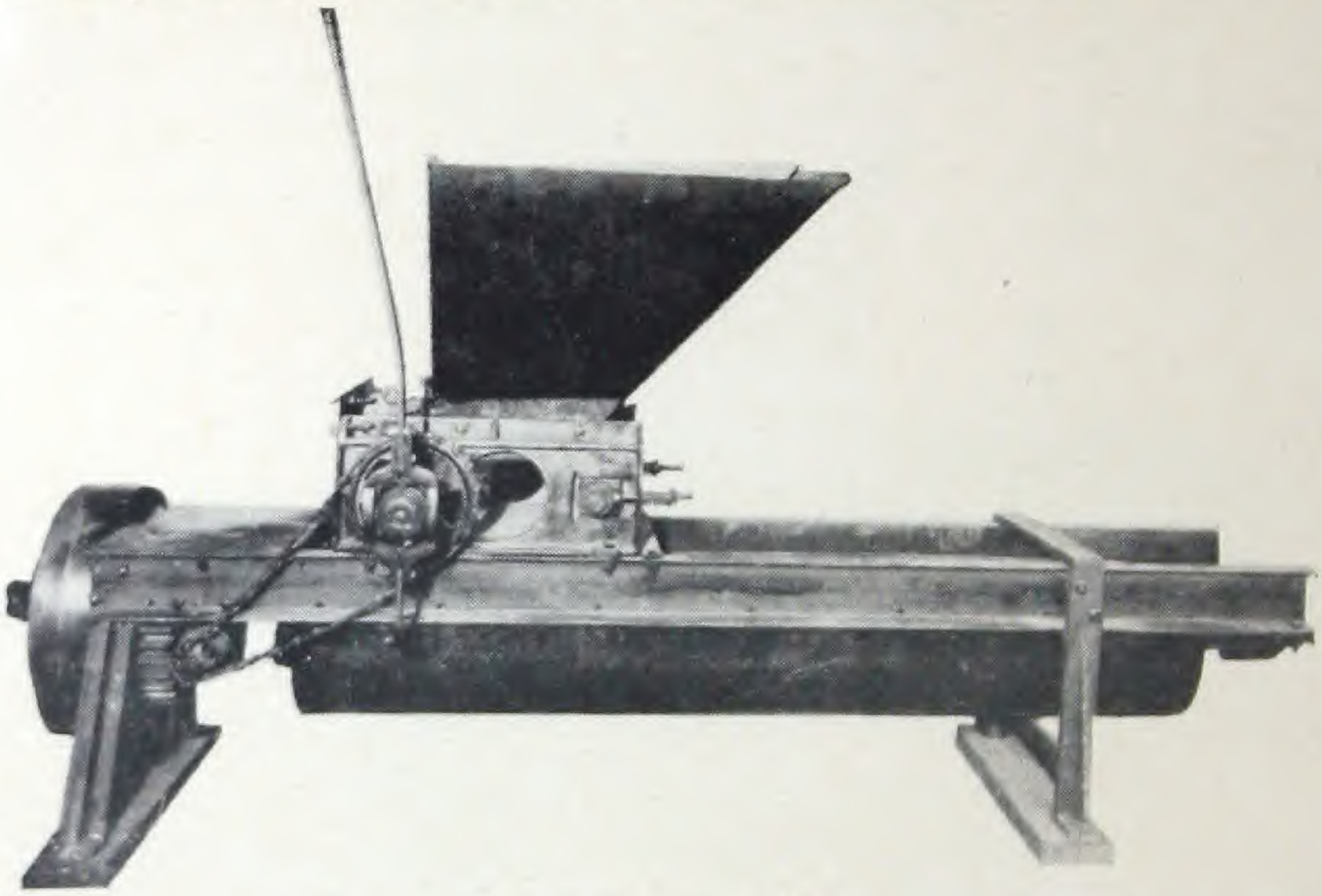
Eberling Mixers are made in three sizes designated by numbers representing the lengths of the mixing barrels, namely, 6, 7½, and 10-foot barrels. Mixers are furnished with either a single divided hopper or two divided hoppers. The single hopper permits the use of two materials as cement and aggregate. The two hoppers permit the use of cement and three grades of aggregate, or two grades of aggregate and an admixture. This feature is of value as the importance of using well graded aggregate is now recognized.



Eberling Continuous Mixer, End View

Mixers designated by the letter "A" after the size number as No. 10-A have two double hoppers. Single double hoppers are designated by figures alone, as No. 6, No. 7½, No. 10.

Hoppers are equipped with positive feeding rolls and belts. A lump of cement caused by warehouse set does not clog the discharge opening but is shaved off gradually until the lump has been fed into the mixer barrel as fine cement. Positive feeding insures accuracy in proportioning materials. This one bugaboo held in mind by engineers who have had experience with continuous mixers is now dispelled by the Eberling Continuous Mixer. Hopper capacity is large and ample to fill with one loading the entire length of mixer barrel. The mixer is provided with a separate clutch for feeding materials and another separate clutch for operating the mixing paddles. Feeding can be stopped at will and the mixing barrel emptied by leaving power on the mixing paddle shaft.



Eberling Single Hopper Mixer

In the Eberling Mixer a 3-inch round shaft is used. It is evident that such a shaft will be positive in action and will transmit the power necessary for thorough mixing. The paddles are so shaped, set, and interlocked that every bit of concrete material is thrown backward one third of its travel through the barrel. This results in a tearing, throwing, and folding action that causes every particle of cement to receive its share of water and every part of aggregate to receive its share of cement mortar. In the Eberling mixers colloidal action is attained.

Guaranteed capacities of the mixers are: No. 6—20 cubic yards; No. 7½—35 cubic yards, and the No. 10—50 cubic yards of concrete per 8-hour day. These statements of capacities are

ultra conservative. The mixer is operated with a paddle shaft speed of 40 r. p. m.

A tight and loose pulley is supplied with each No. 6 and 6-A mixers and a friction clutch on the larger mixers.

Patented gears used on these machines for driving will not retain sand or pebbles due to the design of the gear teeth which permit the obstruction to drop through without breaking the teeth or stopping the mixer. It will be evident that fine material cannot become packed in these gears. This refinement in design is peculiar in the Eberling Continuous Mixer.

A record of 6 years service in the Detroit plant operated by the Eberling Machines Sales Co. indicates the excellence of service rendered by Eberling Mixers. This mixer in the 6 years required no other repairs than the replacement of worn paddle tips. At the end of 6 years service a new barrel was installed. This is a record that is unexcelled.

Eberling Continuous Mixers turn out concrete that will make concrete products of such high quality that the requirements of any fair building code can be met. Such products will meet all of the requirements of the American Concrete Institute standards, which form the basis of many building code sections relating to concrete building units.

Graded aggregate may be delivered to the hoppers of the Eberling Continuous Mixer from overhead storage bins, or by material conveyors of any type. Bank run, or run of crusher materials may be delivered to an overhead screen by a bucket elevator or a belt conveyor, the material passed through the screen and into the several hoppers of the mixer. Cement may be received at the plant either in bags or in bulk. If in bags, the cement is emptied into the cement hopper by the mixer man. If in bulk, the cement can be delivered into the cement hopper by gravity from an overhead storage bin or by mechanical conveyors.

Mixers may be set on the floor level or at any desired level. Concrete may be delivered directly from the mixer to the hoppers on the tile, block, or brick machines, or by a concrete ladder conveyor. Ordinarily the ladder conveyor is recommended.

DATA REGARDING EBERLING CONTINUOUS MIXERS

	No. 6	No. 7½	No. 10
Capacity in cu. yds. per day	20	35	50
H. P. of electric motor required	5	10	10
Floor space required. Ft.	3x8	3x11	3x15
Height of top of material hoppers above floor. Ins.	42	60	60
Distance from floor to discharge opening	12	12	12
Shipping Weight. Lbs.	1100	2200	3000

Note—Greater output is obtained by using a more powerful motor.

EBERLING TRANSFER SYSTEM

No chain is stronger than its weakest link. No part of a products plant is faster than the slowest element in the schedule of operations.

Eberling Mixers supply well mixed concrete as rapidly as required by Eberling tile block, and brick machines. The machines will turn out standard building units at the rates guaranteed for each machine. Guarantees could not be made if Charles M. Eberling had not designed a transfer system which takes tile, block, or brick from the machines as rapidly as they are made.

The conveyor is of a new type and will transfer one pallet or stacks of pallets as high as they can be piled. Stacks can be put one against another and the conveyor will continue to transfer the products steadily, surely, and without vibration to the curing rooms and through the curing rooms.

The length of each conveyor is figured on the capacity of the machine it serves and the days output is loaded on one or more conveyors as may be planned. The days run of products is left in the curing room over night. When operations are resumed the next morning a man at the exit of the curing rooms removes the products from the pallets, places the products on a roller conveyor and the pallets on another roller conveyor or on an Eberling Conveyor. The pallets are returned by gravity or power to the machine ready for use again. The products move by gravity to any part of the storage yard where a man piles them.

ECONOMY IN OPERATION

There is no bother of pushing cars or racks around the plant or yard. Automatic operation replaces much of the manual labor and the saving is a matter of moment. In one plant 5000 tile are made each day with four men less than were used before the Eberling Transfer System was installed. At $7 a day per man this resulted in a saving of $28 a day. Figure this at any rate of pay from $3 to $8 and it will be seen why Eberling Equipment pays big dividends.

The power required to operate the Eberling Transfer System is small. Ordinarily an electric motor of from 2 to 5 h. p. will suffice for each machine. The conveyor is simple in design, operates with a minimum of friction, without noise and with but little attention once it is ready for use.

The careful reader of this catalog will realize why Eberling Equipment is claimed to be high grade.

Any one figuring the cost of a plant should, in making comparisons, figure the cost of all equipment necessary to make the quantities of products guaranteed by this company. Guarantees in writing should be made by any one claiming to have equally efficient equipment for less money.

EBERLING EQUIPMENT ECONOMIZES

It can be stated without fear of contradiction that an Eberling plant designed and equipped throughout to make 2000 8x8x16-inch block, or 5000 5x8x12-inch tile, or 30,000 brick in one day will cost less than a plant equipped with any other equipment of the same capacity. All items of cost should be figured, including land, buildings, equipment and labor.

Positive guarantees will be made on Eberling Equipment, as to design, workmanship, materials, operation, and production.

SIZE OF PLOT

To provide space for machine room, curing rooms, cement and aggregate storage, and storage for cured products, one acre is sufficient and a plot 1½ acre is amply large. Where brick, tile, and block are made on three machines, or more, additional space is required.

A well stocked yard is an asset to any concrete products plant.

Prospective buyers of tile, block, and brick when viewing a large stock of products appreciate that prompt deliveries can be made. An empty yard turns away orders.

For the larger projects in which concrete building units can be used to excellent advantage, rapid production is essential. The successful bidder wants quick delivery of building materials. He will therefore place an order with a well designed plant when he would turn away from a small plant of low production. With Eberling Equipment no order need be turned away. Low cost and rapid production will result in orders.

A Beautiful Home built with Eberling Concrete Tile

Proposals are made by THE EBERLING MACHINES SALES CO. for all equipment necessary for a complete plant. Those desiring proposals are requested to fill out the sheet entitled "Information Desired" and mail it with any other information pertinent to the plant to THE EBERLING MACHINES SALES CO., 2394 Canal Road, Cleveland, Ohio.

DATA ON TILE, BLOCK, AND BRICK

Tile

1000 5x8x12-inch Tile require—
- 6 cu. yds. Aggregate
- 9 bbls. Portland Cement
- 7 men for 1/5 day (5000 tile made in one day)

1000 5x4x12-inch Tile require—
- 3 cu. yds. Aggregate
- 4½ bbls. Portland Cement
- 7 men for 1/10 day (10,000 tile made in one day)

Block

1000 8x8x16-inch Block weighing approx. 50 lbs. require—
- 16 cu. yds. Aggregate
- 18 bbls. Portland Cement
- 7 men for 1/2 day (2000 block made in one day)

Brick

1000 Standard Brick require—
- 1½ cu. yds. Aggregate
- 2 bbls. Portland Cement
- 8 men for 1/30 day (30,000 brick made in one day).

ESTIMATE OF COSTS

At.....

Date.....

DATA

Portland Cement, per bbl. (Net) $.....

Sand, per cu. yd., delivered.....

Coarse Aggregate, per cu. yd., delivered.....

Labor, per hour.....

Hours Worked, per day.....

Cost of 5 x 8 x 12 in. tile per 1000

6 cu. yds. Aggregate (Mixed) @ $..... =$.....

9 bbls. Portland Cement @ $..... =$.....

7 Men @ $..... ÷5..... =$.....

Total Factory Cost, per 1000..... $.....

Cost of Concrete Block, 8 x 8 x 16, per 1000. Wt. 50 lbs. each.

16 cu. yds. Aggregate (Mixed) @ $..... = $.....

18 bbls. Portland Cement @ $..... = $.....

7 Men @ $..... ÷ 2..... = $.....

Total Factory Cost, per 1000..... $.....

Cost of Concrete Brick, per 1000

1½ cu. yds. Aggregate @ $..... = $.....

2 bbls. Portland Cement @ $..... = $.....

8 Men @ $..... ÷ 30..... = $.....

Total Factory Cost, per 1000..... $.....

EBERLING EQUIPMENT ECONOMIZES

An Imposing Home built with Eberling Concrete Tile

THE EBERLING MACHINES SALES CO.
2394 Canal Road
Cleveland, Ohio

INFORMATION DESIRED

Area of plant site.....Acres
Dimension of plant site.....ft. by.....ft.
Size of buildings (if any).....
Type of buildings—frame, concrete, brick.....
Cost of Labor per.....hr. day $.....
Cost of Cement per bbl. $.....
Cost of Sand per cu. yd. $.....
Cost of Gravel per cu. yd. $.....
Cost of Crushed Stone per cu. yd. $.....
Cost of Cinders per cu. yd. $.....
Cost of Sawdust per cu. yd. $.....
Cost of Granulated Slag per cu. yd. $.....

Note:—All prices to be f. o. b. plant site.

Products to be made:

Brick, size.....
Tile, size.....
Block, size.....

Quantity of products to be made in 20 working days:

Brick.....
Tile.....
Block.....

Capital Available $.....
REMARKS:.....
.....
.....

Name.....
Address.....
City.....State.....

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API INTERNATIONAL

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